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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/282,425	03/31/1999	KENJI NAGASE	122.1366	8587

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EXAMINER

MAKHDOOM, SAMARINA

ART UNIT

PAPER NUMBER

2123

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Please find below and/or attached an Office communication concerning this application or proceeding.

PRG

Office Action Summary	Application No. 09/282,425	Applicant(s) NAGASE ET AL.	
	Examiner Samarina Makhdoom	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 31 March 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2, 4</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

Figures 4, 6A, 6B, 11, 12A, 12B, 13, 14, 15A, 15B, 15C, and 16-18 need to be labeled as prior art. For example Figures 11, 14, and 15A-C appear in the patents included in the Information Disclosure Statement.

Specification

2. The Examiner has relied on Section 608.01(p) I. (*Incorporation by Reference*) of the MPEP for guidance regarding Applicants' incorporation by reference. This section recites (in part):

“An application as filed must be complete in itself in order to comply with 35 U.S.C. 112. Material nevertheless may be incorporated by reference, *Ex parte Schwarze*, 151 USPQ 426 (Bd. App. 1966). An application for a patent when filed may incorporate “essential material” by reference to (1) a U.S. patent or (2) a pending U.S. application, subject to the conditions set forth below.

Essential material” is defined as that which is necessary to (1) describe the claimed invention, (2) provide an enabling disclosure of the claimed invention, or (3) describe the best mode (35 U.S.C. 112). ***In any application which is to issue as a U.S. patent, essential material may not be incorporated by reference to*** (1) patents or applications published by foreign countries or a regional patent office, (2) ***non-patent publications***, (3) a U.S. patent or application which itself incorporates “essential material” by reference, or (4) a foreign application.

Nonessential subject matter may be incorporated by reference to (1) patents or applications published by the United States or foreign countries or regional patent offices, (2) prior filed, commonly owned U.S. applications, ***or (3) non-patent publications***

however, hyperlinks and/or other forms of browser executable code cannot be incorporated by reference. See MPEP § 608.01. Nonessential subject matter is subject matter referred to for purposes of indicating the background of the invention or illustrating the state of the art.

Mere reference to another application, patent, or publication is not an incorporation of anything therein into the application containing such reference for the purpose of the disclosure required by 35 U.S.C. 112, first paragraph. In re de Seversky, 474 F.2d 671, 177 USPQ 144 (CCPA 1973). In addition to other requirements for an application, the referencing application should include an identification of the referenced patent, application, or publication. *Particular attention should be directed to specific portions of the referenced document where the subject matter being incorporated may be found.*"

3. Applicants use "means for" language is an apparent improper attempt to incorporate essential matter from non-patent literature. The apparent attempt to incorporate subject matter into this application by reference to "means for" is improper for the following reasons. "Means for" language indicates that the material is to be found elsewhere. Applicant's have not indicated where the material is to be found.

Claim Objections

4. Claims 6-10 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. For Example, Claim 1 states "...setting a representative frequency with respect to a carrier wave frequency, at least one upper sideband frequency, and at least one lower side band frequency..." Claim 6 is dependent on Claim 1. Claim 6 states "...setting a representative frequency with respect to a carrier wave frequency, at least one upper

sideband frequency, and at least one lower side band frequency...” and does not further limit Claim 1.

Claim Interpretation

5. The broadest reasonable interpretation of the claim language has been give to claims 1-5, and 11-21. Claims 1-5, and 11-21 have been interpreted in view of 35 U.S.C. 112, and *In re Donaldson*, 16 F.3d 1189, 29 USPQ2d 1845 (Fed. Cir. 1994).

Reciting the pertinent section of 35 U.S.C. 112, paragraph six:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The “means for” claims have been interpreted as per *In re Donaldson*. The term “a calculating means for” has been interpreted as software programs.

6. Claims 6-10 will not be examined with respect to prior art in so far as they have been objected to for failing to further limit the intervening claims.

The term “immunity,” used in the preamble of Claim 1 but not further explained in the body of the Claim, has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

As per “means for” language in the specification, it is interpreted that such language only refers to what is expressly recited in the specification.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. **Claim 1-5 rejected under 35 U.S.C. 112, first paragraph**, because the specification, while being enabling for calculating mutual impedance and solving equations with the moment method, does not reasonably provide enablement for “means for calculating” or anything else which depends on “means for” language in the specification. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The scope of enablement is only that which is expressly recited in the specifications. The extensive use of the “means for” language is

an apparent attempt to incorporate by reference something that is not explained in the specification. Clarification is required.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 16 it is unclear if “a calculating means for segmenting said electronic apparatus and antenna specified...” is segmenting both the electronic apparatus and antenna or just segmenting the electronic apparatus. This claim is interpreted as segmenting both the antenna and electronic apparatus.

In Claim 18 it is unclear what the executing means for changing the distance between the antenna and electronic apparatus is. Does this claim relate to Figure 4? (See Page 22 of the specification, lines 5-13). It is interpreted as not processing real test data but simulating a test situation.

For Claims 17-27, these claims are dependent on an indefinite claim and therefore have the inherent deficiency of the independent claim.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

11. Claims 1, 3-4, 11, 13-14, 16-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Otsu et al, U.S. Patent No. 5,903,477.

The applied reference has a common Inventors and Assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As per claim 1, Otsu et al disclose an apparatus for calculating a radiated electromagnetic field including segmenting the electronic apparatus into elements, calculates a mutual impedance among elements, and solves simultaneous equations under the moment method, comprising: a first calculating means (see col. 16, lines 20-37) where sampling frequencies are selected for calculating the mutual impedance; and a second calculating means (see col. 17, lines 55-64) for solving simultaneous equations using the moment method.

As per Claim 3, See discussion re Claim 1 above for first and second calculating means; and Otsu et al discloses a calculating means for calculating the mutual impedance of respective frequencies using the mutual impedance calculated at a sampling frequency by approximate expression. (See Col. 9, lines 48-53 and Col 23, lines 45-52) In calculating the mutual impedance by approximation or proportion, the electric current will also be calculated by approximation or proportion.

As per Claim 4, this claim combines the limitations of Claims 1 and 3. See discussion re Claims 1 and 3 above. Therefore, Claim 4 is anticipated by the Otsu et al reference.

As per Claims 11, 13-14, and 22-27 Otsu et al disclose that when considering a dielectric, a mutual admittance and mutual reactance among elements at the representative frequency are calculated in accordance with simultaneous equations under the moment method (See Col. 6, lines 19-47). This further limitation of the above claims is disclosed in the Otsu reference.

As per Claim 16, this claim has been interpreted as segmenting both the electronic apparatus and antenna in the segmenting means. For a simulation of Antennas, it is inherent to have a means for managing and acquiring antenna information. Also when using the Method of Moments it is inherent to segment the boundary surface of dielectric through which the current flows as disclosed in Otsu et al. (See Col. 2, lines 40-46)

As per Claim 17, this claim teach an alarm means for comparing voltage generated at a specified position by virtually inserting a voltage across an infinitely large resistance. Otsu et al. Teaches the same method for setting threshold voltage (See Col. 22 lines 57-61)

As per Claim 18, the limitation of segmenting the antenna, calculating mutual impedance, solving equations with the Moment Method, and calculating the intensity of the electric field are disclosed in Otsu et al. as discussed. Claim 18 includes an executing means for changing the distance between the antenna and electronic apparatus. The Otsu et al reference discloses a distance between element r_0 in the equations and description of equations in. (See Col. 6, lines 20-24). It is inherent in the Moment Method calculations that the distance between two elements can be changed because there is a variable present in the equations for changing the distance. Therefore the executing means for changing the distance between the antenna and electronic apparatus as claimed in Claim 18 is inherently present in the Moment Method and disclosed in Otsu et al.

As per Claim 19, Claim 19 combines the limitations of Claims 16-18; all the limitations of Claim 19 are disclosed in the Otsu et al reference as per the discussion above.

As per Claim 20-21, these claims combine the limitations of Claim 18 and 19 respectively with calculating the Moment Method equations for the carrier wave, upper sideband, and lower sideband. All the limitations of Claim 20 and 21 are disclosed in the Otsu et al. reference as per the discussion above.

As per Claim 28, this is the method claim outlining the same steps as in Claim 3. The Otsu et al reference not only outlines the calculating means for Claim 3 but also discloses and claims the method of calculation for Claim 28.

Claims 29-32 are rejected based on the same reasoning as claims 1,3-4 and 16 supra. Claims 29-32 are program product claims reciting the same or equivalent limitations as Claims 1, 3-4, and 16 taught within Otsu et al.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 2, 5, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsu et al in view of Nakanishi, U.S. Patent 5,887,186.

As per claims 2 and 5 Otsu et al disclose an apparatus for calculating a radiated electromagnetic field including segmenting an electronic apparatus into elements, calculates a mutual impedance among elements, and solves simultaneous equations under the moment method, comprising: a first calculating means (see col. 16, lines 20-37) where sampling frequencies are selected for calculating the mutual impedance; and a

second calculating means (see col. 17, lines 65-65) for solving simultaneous equations using the moment method. Otsu et al mention using LU decomposition for achieving higher processing speed. Otsu et al, however does not disclose many details pertaining to the LU decomposition for achieving higher processing speed. Nakanishi teaches LU decomposition to speed up processing time (See column 2, lines 5-8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Otsu et al. teaching with the Nakanishi LU decomposition method because 1) Otsu expressly discloses using the LU decomposition technique and 2) it would save computation time and allow for a higher processing speed. The benefit to computation time and processing speed are stated in the Otsu et al reference, "at the time of solution of the simultaneous equations under the moment method, if for example the LU breakdown method... is used, a further higher processing speed can be achieved. (See col. 18 lines 1-5).

As per Claims 12 and 15, these claims are dependent on Claims 2 and 5 respectively. Otsu et al disclose that when considering a dielectric, a mutual admittance and mutual reactance among elements at the representative frequency are calculated in accordance with simultaneous equations under the moment method (See Col. 6, lines 19-47).

Double Patenting

14. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*,

422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

15. Claims 1, 3-4, 11, 13-14, and 29-31 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 7, 27-28, and 33-34 of U.S. Patent No. 5,903,477 to Otsu et al as discussed below.

Claims 1 of both patents are identical except that Otsu teaches using a Fourier Transform and the current application does not. Claim 29 of the current application is the Method Claim of Claim 1 of the current application and therefore is directed to the same subject matter as Claim 1.

Claim 11 of the current application teaches the same limitation to Claim 1 as Claim 7 of the Otsu et al reference teaches to Claim 1.

Claim 3 of the current application corresponds to Claim 27 of the Otsu et al reference. Claim 30 of the current application is the Method Claim of Claim 3 of the current application and therefore is directed to the same subject matter as Claim 3. Both claims are identical except for Claim 27 of Otsu et al is directed to calculating currents and Claim 3 of the current application, is directed to calculating currents and other currents.

Claim 13 of the current application teaches the same limitation to Claim 3 as Claim 28 of the Otsu et al reference teaches to Claim 27.

Claim 4 of the current application corresponds to Claim 33 of the Otsu et al reference. Claim 31 of the current application is the Method Claim of Claim 4 of the current application and therefore is directed to the same subject matter as Claim 4. Both claims are identical except for Claim 33 of Otsu et al is directed to calculating currents and calculating the currents in the time domain and Claim 4 of the current application, is directed to calculating currents and two other steps for calculating additional currents.

Claim 14 of the current application teaches the same limitation to Claim 4 as Claim 34 of the Otsu et al reference teaches to Claim 33.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the elements of method of moments, mutual impedance, dielectrics, and and computer readable medium differ only in that the invention of the instant application is broader by omitting the use of Fourier Transform whereas Otsu et al teach all the limitations including the Fourier Transform. It would have been obvious to one of ordinary skill in the art at the time the invention the invention was made to modify Otsu et al to omit the use of the Fourier Transform because Fourier Transform is only necessary when there need to change between time and frequency domain. Thus, the removing the Fourier Transform allows for more easier use of the invention.

Note that Claims 27 and 33 in the Otsu reference do not recite the antenna. It is inherent and well known to those of ordinary skill in the art at the time the invention was made that all circuits are radiators and therefore function as antennas, regardless of intended use.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,745,370, Ohtsu et al. teaches An electromagnetic field intensity calculating device calculates according to a moment method the intensities of the electric field and the magnetic field radiated by an electric circuit device having metal portions and dielectric portions.

U.S. Patent 6,285, 957, Tanaka et al. teaches An apparatus and method to calculate the strength of an electromagnetic field radiated from an electric device according to a moment method.

U.S. Patent 6,175,815, Stalzer teaches a method for efficiently storing quantities used by the Fast Multipole Method to perform field calculations.

K Homma, K. Nagase, M. Noro, P. E. Strazdines, T. Yamagajo, "Frequency Interpolation Methods for Accelerating Parallel EMC Analysis, IEEE, August 2001, 1632 - 1635. This reference teaches Electromagnetic field analysis applications based on the Method of Moments can be used to simulate the emissions for electrical device.

E. Michielssen, A. Boag, "Reduced Representation of Matrices Generated by the Method of Moments," IEEE, March 1994, pages 420-423. This paper teaches an algorithm that accelerates the iterative solution of boundary integral equations using the Method of Moments.

F. Canning, "The Impedance Matrix Localization (IML) Method for Moment-Method Calculations", IEEE Antennas and Propagation magazine, October 1990, pages 18-30. This paper teaches the Impedance Matrix Localization Method as an enhancement to the Moment Method calculations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samarina Makhdoom whose telephone number is (703) 305-7705. The examiner can normally be reached on Full Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin J. Teska can be reached on (703) 305-9704. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703) 305-0040
for regular communications and (703) 305-0040 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the receptionist whose telephone number is (703) 305-
3900.

SM

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July 14, 2002


DR. HUGH M. JONES
PATENT EXAMINER
ART UNIT 2123